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ABSTRACT

The standard is used to grade the nonsupervisory work involved in coordinating (onsite) the movement, make up, or break up of trains, locomotives, and train cars. The work requires knowledge of the layout of a railroad track system; knowledge of and ability to follow numerous safety, signalling, switching, track use, train car, and train movement procedures, restrictions, and requirements; and knowledge of the movement and braking characteristics of locomotives, train cars, and various sizes of trains under a variety of weather, visibility, speed, cargo, track, and other operating conditions. For both brakeman and conductor, a general description of job duties is provided, together with comments on skill and knowledge requirements, areas of responsibility, physical effort needed, and the working conditions. (Author/AG)

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JOB GRADING STANDARD FOR

BRAKEMAN AND CONDUCTOR

WG-6003

ED 090384

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U.S. CIVIL SERVICE COMMISSION
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WORK COVERED

This standard is used to grade the nonsupervisory work involved in coordinating (onsite) the movement, make up, or break up of trains, locomotives, and train cars. The work requires knowledge of the layout of a railroad track system; knowledge of and ability to follow numerous safety, signaling, switching, track use, train car, and train movement procedures, restrictions, and requirements; and knowledge of the movement and braking characteristics of locomotives, train cars, and various sizes of trains under a variety of weather, visibility, speed, cargo, track, and other operating conditions. Some work covered also requires ability to plan efficient work sequences in making up, breaking up, and overseeing (onsite) the safe movement of trains; ability to coordinate the work of a train crew, and the ability to enforce numerous operational and safety procedures and requirements.

WORK NOT COVERED

—Operation of rail motor cars and self-propelled mobile rail maintenance equipment. (See WG–6100 Railroad Maintenance Family.)
—Operation of locomotives. (See WG–6004 Locomotive Engineer.)
—Maintaining railroad track. (See WG–6100 Railroad Maintenance Family.)
—Overseeing the operations of all trains at an installation. (See Yardmaster Series, WG–6006.)

TITLES

The title, *Brakeman*, is to be used for work which involves helping to move locomotives and trains by throwing switches, setting brakes, coupling and uncoupling cars, observing for hazards, flagging, and signalling.

The title, *Conductor*, is to be used for work involving full responsibility, as crew chief, for monitoring and coordinating, *onsite*, the movement and work activities of a train and crew.

GRADE LEVELS

This standard does not describe all possible grade levels for this occupation. If jobs differ substantially from the skill, knowledge, and other work requirements at the grade levels described in this standard, they may be graded at levels other than those described based on the application of sound job grading methods.

NOTE TO USERS

Some conductors, on a regular and recurring basis, may be in charge of train crews that are larger than those described as typical in the WG–9 level of this standard. Such jobs should be reviewed to determine whether they fully meet the criteria for grading under the Civil Service Commission job-grading standard for leader.

General: The WG-7 Brakeman performs individual switching, signaling, flagging, coupling, uncoupling, brake setting, observing, and safety tasks involved in the movement of locomotives, trains, and train cars under a variety of size, load, weather, and track conditions. He uses a thorough knowledge of the layout of an installation track system and numerous safety and operational track use requirements and procedures. He maintains constant watch over his assigned area and equipment, checking continually for operating hazards, malfunctioning or defective equipment, or track obstructions, and when problems arise informs the conductor or engineer, through signals or other means, so that necessary action can be taken to resolve the problem. He gives, passes, and responds to signals and instructions in both routine and emergency situations. He receives general directions from the conductor regarding the move to be made or the task to be done, and performs the tasks necessary to carry out the work with a minimum of further instructions.

Skill and Knowledge: The WG-7 Brakeman applies a knowledge of the layout of an extensive track system such as the layout characteristics of 20 to 100 miles of track with numerous pick up and set out points (sidings, loading ramps, warehouses, repair shops, or classification areas), crossovers, curves, busy grade crossings without protective gates, car storage areas, and switching points.

When informed of the trip destination and purpose, the brakeman knows whether the track switches are properly set as the train approaches them, how to change those which are not, and how to reset them after the train passes or a car is set out or picked up. He knows how and when to get on and off standing or moving trains; and how, when, and where to signal and flag. He knows the approximate location of shops, warehouses and storage areas, sidings, etc., and the usual track routes and switch settings for entering and leaving these areas.

The WG-7 Brakeman knows the operating characteristics of one or a few types of locomotives when pulling a variety of types and sizes of cars and cargo under various weather conditions, visual conditions, and track conditions. Using this knowledge, he applies skill in judging braking and stopping distances (e.g., in connection with coupling) in order to give signals in time for the engineer to react properly.

The WG-7 Brakeman knows, gives, passes, or responds to all required sound, sign, hand, light, fusee, torpedo, switch, color, and lantern sig-

nals for both normal and emergency conditions. For example, the Brakeman selects and uses the proper signaling means or equipment, such as arms and hands, lanterns, lights, or flags; the various signal codes; and the proper techniques to give signals. These signals include, for example, those for the train to move forward, move backward, apply brakes, increase or decrease speed, and come to an immediate (emergency) stop; signals to ask the engineer for information, to warn motorists or pedestrians, and to alert others to accidents; and signals which indicate direction of train movement, presence of work crews or obstacles ahead, and defective running gear.

The WG-7 Brakeman knows and uses a variety of standard procedures for setting out, transferring and picking up individual cars and groups of cars. He knows procedures, such as rear and front end shoving, for placing a car in the desired area. He knows how to move or place a car in a specific section or order in the train or set out area by uncoupling, controlling brakes, shunting, etc. The brakeman knows the appropriate location for cars at warehouse ramps, turnouts, classification areas, and other setout points. He knows how and when to set, release, and control car brakes, attach and release air brake hoses, close air line angle cock, and place and remove chocks. He can identify a wide variety of cars, such as various gondola, flat, tank, and box cars. He uses this knowledge, along with signaling and observing ability and skill in estimating stopping and braking time or distance, to assist in picking up, setting out, switching, coupling, and moving cars and other train activities.

The WG-7 Brakeman maintains a constant check for variety of common track and train operating conditions which can cause train breakdown, derailment, damage to cargo, operating failure or which could lead to other accidents. He detects defective switches, misaligned tracks, presence of track maintenance crews and vehicles, insecure cargo, and similar conditions. The brakeman looks for unusual smoke, flame, or hot boxes; locked wheels; flat wheels; defective couplers and air hoses, derailed cars, and similar defective equipment. He also helps the engineer check the operation of the sander and brakes by observing their operation.

Responsibility: The WG-7 Brakeman receives instructions which indicate the crew to which he is assigned, destination points, and the duties he is to perform. He is required to know and follow numerous standard safety, signaling, and train movement procedures, and to

respond to the signals of the conductor and locomotive engineer. He must be constantly alert to help avoid, or take appropriate actions for, track obstructions, track defects, train derailment, malfunctioning or defective equipment (e.g., hot boxes, locked wheels or defective air brake hoses), unscheduled track vehicles, unsealed cars, improperly marked cars, and other operating dangers.

The brakeman must be extremely watchful and careful, particularly when visibility is poor, track is slippery, cargo is hazardous or not fully secure, or clearances are tight. He must be able to independently signal, judge distances, judge extent of danger, and perform these and other tasks in stress situations, such as when anticipating a collision or detecting a derailment or track obstruction during operation. The brakeman must be able to keep pace with the train crew, and work effectively as part of a team.

The brakeman follows directions and instructions from higher grade employees, usually the conductor. His work is observed and checked for compliance with operating and safety rules and instructions.

Physical Effort: The WG–7 Brakeman uses considerable physical agility and effort in pushing, pulling, lifting, positioning and turning various braking, switching, and coupling devices (e.g., draw bars); moving and lifting arms and devices to give signals; walking over rails and ties and running (over safe areas) to perform tasks; and climbing aboard locomotives and train cars, sometimes while they are moving or have slippery steps, rungs, and grab irons. He may lift and carry items weighing up to 50 pounds or put forth similar effort in pushing and removing obstacles from the railway.

Working Conditions: The WG–7 Brakeman works under many adverse conditions in both good and bad weather. He is frequently exposed to conditions such as:

—Loud noise from the operating train, train whistle, and horn;

—Fumes and odors, such as those from diesel exhaust and creosote;

—Possible injury from accidental slipping and falling while working and walking over ties, railway slopes, rails, and while boarding, walking upon, and getting off both standing and moving trains;

—Possible injury from coupling and uncoupling devices and air brake hoses;

—Poesible injury from motor vehicles or railway vehicles, and from train derailment or other accidents.

The WG–7 Brakeman may wear protective clothing, such as safety shoes and gloves. He follows numerous safety procedures and requirements to offset some adverse conditions and avoid accidents or injury.

General: As crew member in charge, the WG–9 Conductor monitors, onsite, the safe makeup, breakup, and movement of a train, typically including the activities of a brakeman and a locomotive engineer. The Conductor:

—Plans the best sequence of arranging, picking up, and setting out cars, in order to accomplish work with the least number of moves, expedite train car use, save time, meet deadlines, and comply with the safety regulations and practices;

—Oversees the movement of fragile, hazardous, or insecure cargo;

—Implements procedures for special handling of cargo under a variety of conditions such as operating off agency property, passing through hazardous test areas, or operating in areas with unusually tight clearances;

—Coordinates minor rerailing operations;

—Conducts the train during bad weather, poor visibility, or night time operation;

—Insures that brakemen are properly placed and follow pertinent regulations, instructions, and requirements;

—Insures that cargo is secure or cars are properly sealed;

—Coordinates moves with a dispatcher or yardmaster, and records train, car, and crew activities; and

—Constantly checks to insure that the entire crew is following safety and movement regulations, and insures that conditions are safe before he allows the train to move.

In addition, the conductor may perform many of the tasks described for brakeman.

Skill and Knowledge: The WG–9 Conductor applies skill in monitoring and coordinating the work activities of the train and its crew. With assistance provided by the train crew, he coordinates the safe and efficient movement, breakup, and makeup of the train as necessary to complete work assignments. In addition to those required by the WG–7 Brakeman, the conductor uses the following skills, knowledge, and abilities in planning and coordinating the work:

—Ability to place and continuously relocate himself and the brakeman so that, with the participation of the locomotive engineer, the complete train can be observed and—through signaling—conducted before and during movement;

—Ability to get instant response and adherence to safety practices and operating requirements on the part of the train crew;

—Knowledge of efficient ways to make up a train, arrange cars, pick up and set out cars, and transport cargo when nonroutine procedures are involved; for example, he applies this knowledge in making changes to a busy trip schedule for most efficient use of time; arranging large numbers of different cars (as they are picked up) in best sequence for efficient drop off at numerous sites; planning how to proceed when cargo is hazardous, fragile, or not fully secured; and handling cars of unusual size;

—Skill in coordinating emergency and other difficult train activities such as those for rerailment (when locomotive or cars are not overturned); movement in bad weather, darkness, or fog; and safe movement of cargo extending over one car;

—Ability to train individual brakemen in the skills and knowledges required in their jobs; and

—Ability to complete work reports, switching lists, and accident reports.

Like the WG–7 Brakeman, the WG–9 Conductor has the ability to remain constantly alert. In addition, the Conductor applies a more extensive, detailed knowledge of safety and operational procedures and the layout of the track system in constantly checking and coordinating the activities of the train crew.

Responsibility: The WG–9 Conductor is responsible for onsite coordination of train makeup, movement, and train crew activities including enforcement of safety rules, operating restrictions, track use requirements, and work schedules.

In addition to the responsibilities described for the WG–7 Brakeman, the conductor uses judgment in planning efficient work sequences; for example, in arranging cars, selecting routes, and accommodating additional work or changes in work sequence within time limits or work priorities previously established.

The conductor is also responsible for insuring that the train is properly equipped with safety and signaling devices, that the crew follows safety and operational requirements, that conditions are safe for train movement before and during operation, and cargo is secure or cars are properly sealed.

The conductor receives work assignments from his supervisor for train operations in the form of worklists of cars to pick up and set out,

and instructions received during the day by shortwave radio which add, delete, or change work assigned. Work contact with the supervisor typically involves reporting the status and progress of work operations and causes for delay. The conductor submits daily reports of work completed to his supervisor.

Physical Effort: The physical effort required at this grade is generally the same as that for the WG–7 Brakeman. However, some work at this level may involve more frequent movement and more intense concentration and observation to coordinate crew activities and insure safe overall train movement, while at the same time performing duties similar to those described for the WG–7 Brakeman.

Working Conditions: The working conditions described at this grade are the same as those described for the WG–7 Brakeman.

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